79—5

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Vol. 79, No. 5, P. 327-356, August, 1951

Summer Number

RECORDS OF MEETINGS
FROM OCTOBER 1950 TO MAY 1951

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RECORDS OF MEETINGS

October 11, 1950—Stated Meeting

The One Thousand Three Hundred and Forty-fourth Meeting of the Academy convened in its House on October 11, 1950, and was called to order by the President at 8:20 P.M.

There were present forty-four Fellows and thirty-six guests.

The records of the Meeting of May 10 were read and approved.

The Secretary reported that the Council has authorized circulating two questionnaires to the Fellows: one concerning recommendations to the Government on the effective use of highly trained manpower; and the other concerning suggestions of the Committee on Planning and Development concerning the character of the Academy's membership.

Recently elected Fellows were introduced as follows: George Packer Berry (II:4) by C. Sidney Burwell; E. Power Biggs (IV:4) by George B. Weston; Gordon Stanley Brown (I:4) by Harold L. Hazen; Morris Cohen (I:4) by John Chipman; Geoffrey Edsall (II:4) by James M. Faulkner; Emmanuel Fauré-Frémiet (II:3) by George Wald; William Rede Hawthorne (I:4) by Joseph H. Keenan; Christian Archibald Herter (III:2) by Erwin D. Canham; Roman Jakobson (IV:3) by Taylor Starck; Harry Tuchman Levin (IV:3) by George Sherburn; Richard Collins Lord (I:3) by James A. Beattie; Harold Henry Plough (II:3) by Alfred S. Romer.

It was voted to adopt the revised Statutes as recommended by the Council at its meeting of May 10. The full revised Statutes were distributed in printed form. [These revised Statutes were also printed in the Proceedings, 79(2), Winter Number, January, 1951.]

Mr. Constable (IV:4) reported briefly on his recent travels in Greece, noting in particular the poverty under a primitive economy, also the sense of relief on the part of the man in the street upon the action of the United States in Korea which seemed to be a sign that satellites of the Soviet Union would be restrained.

Mr. Phillips reported on the successful meetings of the International Congress of Mathematicians in Cambridge, August 30 to September 6, attended by about 2,000 from various parts of the world. The Academy had been one of the host institutions and had contributed $1,000 in support of the Congress.

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The following communication was presented:

William Emerson and Robert L. Van Nice: *Hagia Sophia: A Unique Architectural Achievement of the Sixth Century.*

The meeting was dissolved at 10:20 P.M.

November 8, 1950—Stated Meeting

The One Thousand Three Hundred and Forty-fifth Meeting of the Academy convened in its House on November 8, 1950, and was called to order by the President at 8:20 P.M.

There were present fifty Fellows and forty-nine guests.

The records of the Meeting of October 11 were read and approved.

The Secretary reported that the Council had authorized a conference on solar energy and its utilization under the auspices of the Academy in early 1951.

Recently elected Fellows were introduced as follows: Elso Sterrenberg Barghoorn (II:2) by Irving W. Bailey; Francis Bitter (I:2) by John C. Slater; John Ely Burchard (III:4) by Joseph Hudnut; Helen Maud Cam (IV:2) by Wilbur K. Jordan; Saville Rogers Davis (III:2) by C. Fayette Taylor; Lewis Dexter (II:4) by Samuel A. Levine; Hetty Goldman (IV:2) by Wilbur K. Jordan; Carter Goodrich (III:3) by Seymour E. Harris; Michael Karpovich (IV:2) by Charles H. Taylor; Rev. John LaFarge, S.J. (IV:1) by Rev. Michael J. Ahern, S.J.; Samuel Proger (II:4) by Samuel A. Levine; John George Trump (I:4) by Harold L. Hazen; Merle Antony Tuve (I:2) by John C. Slater; Thomas James Wilson (III:4) by A. Baird Hastings.

The following communication was presented:

Isaac Harter: *The Continuous Casting of Steel.*

The meeting was dissolved at 10:20 P.M.

December 13, 1950—Stated Meeting

The One Thousand Three Hundred and Forty-sixth Meeting of the Academy convened in its House on December 13, 1950, and was called to order by the President at 8:25 P.M.

There were present thirty Fellows and fourteen guests.

The records of the Meeting of November 8 were read and approved.

The Secretary reported that the Council had approved twelve grants-in-aid from the Permanent Science Fund.

Recently elected Fellows were introduced as follows: James Stevens Simmons (II:4) by Edwin B. Wilson; Charles Southward

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Singleton (IV:3) by George B. Weston; John Crayton Snyder (II:4) by James S. Simmons; Philip Rodney White (II:2) by Ralph H. Wetmore.

Mr. Carl J. Friedrich reported on impressions from his stay in Heidelberg last summer.

The following communication was presented:

Paul C. Mangelsdorf: *Applied Genetics and the World Food Problem.*

The meeting was dissolved at 10:10 P.M.

January 10, 1951—Stated Meeting

The One Thousand Three Hundred and Forty-seventh Meeting of the Academy convened in its House on January 10, 1951, and was called to order by the President at 8:35 P.M.

There were present thirty-eight Fellows and forty-two guests.

The records of the Meeting of December 13 were read and approved.

Recently elected Fellows were introduced as follows: Roy Orval Greep (II:3) by Frederick L. Hisaw; James Howard Means (II:4) by Joseph C. Aub; Eric Reissner (I:1) by William T. Martin; Herbert Wallace Schneider (IV:1) by Arthur D. Nock.

The following communication was presented:

George W. Thorn: *The Development and Application of ACTH and Cortisone.*

The meeting was dissolved at 10:10 P.M.

February 14, 1951—Stated Meeting

The One Thousand Three Hundred and Forty-eighth Meeting of the Academy convened in its House on February 14, 1951, and was called to order by the President at 8:20 P.M.

There were present thirty-three Fellows and twenty-two guests.

The records of the Meeting of January 10 were read and approved.

The President announced the death on February 6, 1951, at the age of 89, of George Russell Agassiz, a Fellow from 1912 to 1951, whose family gave the Academy its present House.

Recently elected Fellows were introduced as follows: Thomas Harrison Mahony (III:1) by Erwin D. Canham; Laszlo Tisza (I:2) by John C. Slater.

The following communication was presented:

Clyde Kluckhohn: *An Anthropological Approach to the Study of Values.*

The meeting was dissolved at 10:00 P.M.

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March 14, 1951—Stated Meeting

The One Thousand Three Hundred and Forty-ninth Meeting of the Academy convened in its House on March 14, 1951, and was called to order by the President at 8:30 P.M.

This meeting had been designated as Ladies' Night, and there were present forty-five Fellows and forty-five guests.

The records of the meeting of February 14 were read and approved.

The Secretary reported a recommendation of the Council that the Statutes be amended, and the Statutes were amended, as follows: The first sentence of Chapter IV, Article 3, was deleted and the second sentence made to read, "The Nominating Committee, as constituted under Chapter XI, Article 1 (xi), shall prepare a list . . ."; and the following paragraph was added to Chapter XI, Article 1, after paragraph (x): "(xi) The Nominating Committee shall consist of twelve Fellows, three from each Class, having the right to vote. The members of the first Nominating Committee constituted hereunder shall be appointed within each Class by the President for terms of one, two and three years. The President shall also appoint one of the Committee to act as Chairman. Thereafter, as vacancies in the membership of the Committee occur, four members, one from each Class, shall be elected annually to serve for a term of three years, one member at such election being designated to act as Chairman for the duration of the term for which he has been elected as a member of the Committee. Nominations for such elections, within each Class, shall be by a vote of the Committee."

Upon recommendation by the Council it was voted that the assessment for the fiscal year beginning April 1, 1951, be $15 for Resident Fellows and $7.50 for Non-Resident Fellows.

Upon recommendation of the Council it was voted that the following appropriations be made for the fiscal year beginning April 1, 1951:

From the General Funds:

Salaries and Pensions	$13,652
General Administration	5,775
House Maintenance	11,275
President's Expense	300
Treasurer's Expense	800
Committee on International Relations	500
Committee on School Science	1,200
	$33,502

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From the Restricted Funds:

Amory Fund Committee	$ 100	
Permanent Science Fund Committee	41,725	
Publication Committee	9,000	
Rumford Committee	5,000	
Warren Fund Committee	1,500	
		57,325
		$90,827

Recently elected Fellows were introduced as follows: Leslie Clarence Dunn (II:3) by Paul C. Mangelsdorf; William Mills Ivins, Jr. (IV:4) by W. G. Constable.

The following communication was presented:

Helen Maud Cam: *Parliamentary Origins in the Light of Recent Discussion.*

The meeting was dissolved at 10:00 P.M.

Minutes of Academy Meeting, April 11, 1951

The One Thousand Three Hundred and Fiftieth Meeting of the Academy convened in its House on April 11, 1951, and was called to order by the President at 8:20 P.M.

There were present eighteen Fellows and seventeen guests.

The records of the meeting of March 14 were read and approved.

The Secretary reported that the Council had approved fourteen grants-in-aid from the Permanent Science Fund.

The Secretary reported that the Rumford Premium for 1951 is to be awarded to Herbert E. Ives of Upper Montclair, New Jersey, for his outstanding contributions to optics.

The following communication was presented:

A Symposium on the Development of the World's Resources, Harlow Shapley, Chairman.

Seymour E. Harris, Harvard University: *The Economics of the Situation.*

Leonard J. Bruce-Chwatt, British Colonial Service: *General Health Problems of the African Tropics.*

Robert S. Harris, Massachusetts Institute of Technology: *Underdeveloped Food for Underdeveloped Countries.*

The meeting was dissolved at 10:20 P.M.

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May 9, 1951—Annual Meeting

The One Thousand Three Hundred and Fifty-first Meeting of the Academy convened in its House on May 9, 1951, and was called to order by the President at 8:15 P.M.

There were present fifty Fellows and four guests.

The records of the meeting of April 11 were read and approved.

A recently elected Fellow was introduced as follows: Edward Mills Purcell (I:2) by John Van Vleck.

The following communications were presented:

William R. Hawthorne: *Jet Propulsion Engines.*

James Howard Means: *Cancer of the Thyroid Gland.*

Zechariah Chafee, Jr.: *Legal Protection of Ideas—Patents, Copyrights, Trade Secrets, etc.*

The annual reports were presented and accepted. New members and officers and committees were elected. These reports and elections are printed below.

The meeting was dissolved at 10:40 P.M.

ANNUAL REPORTS

1950 - 1951

Report on Deaths, Resignations, and the Status of the Membership: 1950-1951

I regret to have to report the following deaths: Twenty-five Fellows and two Fellows Emeriti—George Russell Agassiz (I:1), Charles Henry Beeson (IV:3), Gilbert Ames Bliss (I:1), Harold Simmons Booth (I:3), Kirk Bryan (II:1), Harold Hitchings Burbank (III:3), Edward Capps (IV:3), John Alden Carpenter (IV:4), Edmund Ezra Day (III:4), Alexander Wilmer Duff (I:2), Merritt Lyndon Fernald (II:2), Fred Tarbell Field (III:1), Austin Morris Harmon (IV:3), Edward Jackson Holmes (III:4), John Robert Loofbourow (II:3), Fred Bates Lund (FE II:4), George Abram Miller (I:1), Walter Walker Palmer (II:4), Robert Kilburn Root (IV:3), Chester Stock (II:1), Charles Hyde Warren (II:1), Edwin Sibley Webster (III:4), Dixon Wecter (IV:2), Harry Boyer Weiser (I:3), Harald Malcolm Westergaard (I:4), George Grafton Wilson (III:2), Frederick Shenstone Woods (FE I:1); Seven Foreign Honorary Members—Dionisio Anzilotti (III:2), Vilhelm (Frimann Koren) Bjerknes (I:2), Edward Arthur Milne (I:1), Mikinosuke Miyajima (II:4), Ezequiel Ordoñez (II:1), A(rnold) Sommerfeld (I:2), (Jean) Hyacinthe Vincent (II:4).

Six Fellows have been classed as Emeriti: Albert Francis Blakeslee (II:2), Arthur Alphonzo Blanchard (I:3), Gilbert Chinard (IV:2), Kenneth Lamartine Mark (I:3), Arthur Stanley Pease (IV:3), Robert Seaton Williams (I:3).

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Seven Fellows have resigned: Wilmer Lanier Barrow (1:4), Julian Parks Boyd (IV:2), Lee Alvin DuBridge (I:2), Thomas Hale Ham (II:4), Clifford Burrough Purves (I:3), Frederick Emmons Terman (I:4), Payson Sibley Wild, Jr. (III:2).

In May, 1950, ninety-eight Fellows and twenty-three Foreign Honorary Members were elected to the Academy; all except eight accepted election.

The roll now includes 897 Fellows, 54 Fellows Emeriti, and 143 Foreign Honorary Members (exclusive of those to be elected tonight).

Respectfully submitted,

May 9, 1951 HENRY B. PHILLIPS, *Secretary*

Report of the Treasurer

The Treasurer presented what he characterized as a very pleasant report for a treasurer to make, inasmuch as the physical plant and securities holdings have a market value considerably in excess of the book values, as there was some $7,000 excess of Academy general income over expenditures during the past year, as similar income expected for the coming year is greater than the projected expenditures, and as the investment reserve has been increased considerably as a result of profit from sales of securities. The full report of the Treasurer may be had on application to him; the following tables give Receipts and Expenditures for the fiscal year ending March 31, 1951.

RECEIPTS*

Academy, General:			
Investment Income (Schedule D)	$38,092.18		
Less: Income to Special Funds:	15,110.70		
		$ 22,981.48	
House Charges		4,100.56	
Assessments and Admission Fees		8,321.50	
			$35,403.54
Mabel S. Agassiz Fund:			
Investment Income			128.00
Amory Fund Committee:			
Investment Income			3,948.80
Linda Hall Library Publication Exchange Fund			3,000.00
Kennelly Fund:			
Investment Income			108.80
Permanent Science Fund:			
Boston Safe Deposit and Trust Co., Trustee		$ 14,000.00	
Return of Grants		28.29	
Investment Income		1,152.00	
			15,180.29
Publications Committee:			
Investment Income		$ 3,507.20	
Sale of Publications		1,499.51	
Lake Publications		190.35	
			5,197.06

* Excluding sales of securities.

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Rockefeller Foundation Fund:		
Institute for the Unity of Science		4,300.00
Rumford Fund Committee:		
Investment Income	$ 5,011.50	
Sale of Publications	25.00	
		5,036.50
Special Endowment Fund:		
Investment Income		12.80
Warren Fund Committee:		
Investment Income		1,241.60
Total Receipts		$ 73,557.39

EXPENDITURES*

Academy, General:		
Salaries and Pensions, etc.	$ 12,039.06	
Meetings and General Administration	4,322.57	
House Maintenance	10,233.28	
President's Expense	126.00	
Treasurer's Expense	760.89	
Special Appropriations:		
School Science Fund	1,367.78	
		$28,849.58
Mabel S. Agassiz Fund:		
For Meetings		128.00
Amory Fund:		
Expense		106.07
Institute for the Unity of Science		3,649.58
Permanent Science Fund:		
Grants	$37,763.00	
Expense	398.87	
		38,161.87
Publications Committee:		
Bulletin	$ 1,177.34	
Proceedings	4,255.17	
Miscellaneous	148.37	
		5,580.88
Rumford Fund Committee:		
Expense		1,346.38
Warren Fund Committee:		
Grants		1,400.00
Total Expenditures		$79,222.36

Respectfully submitted,

May 9, 1951 HORACE S. FORD, *Treasurer*

* Excluding purchases of securities.

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Report of the House Committee

The Academy used the House fifty times for its own meetings during the past year, with an average attendance of twenty-six per meeting. Besides the eight stated meetings of the Academy, there were forty-two meetings of various committees and conferences under the auspices of the Academy. A total of thirty-two other scientific or cultural guest organizations held 164 meetings in the House, with an average attendance of seventy-four. It is estimated that the total attendance at meetings and exhibits for the year was about 18,000, an increase of about 28% over the 14,000 estimated for the previous year. The table below lists the various guest organizations and the number of meetings held by each.

	No. of Meetings
Alliance Française (certain meetings with Salon Français)	7
Alpha Omega Fraternity	3
American Airlines, Employees Organization	1
American Federation of Women's Clubs	3
Boston Authors Club	16
Boston Psychoanalytic Society and Institute	16
Boston Public School Art League	1
Boston Society of Civil Engineers	6
Boston Teachers Union	11
Boys Clubs of Boston	1
Brookline Bird Club	3
Children's Museum, Trustees	4
China Students' Club	8
Colonial Dames	1
Committee on Boston Planning	1
Dynamion Society	17
English Speaking Union	1
French Center of New England	12
High School Women's Club of Boston	1
Institute of Contemporary Art	4
Joyce Kilmer Post, American Legion, and Auxiliary	19
National Planning Association	1
New England Botanical Club	9
New England Farm and Garden Association	2
New England Woman's Press Association	6
New England Section, Optical Society of America	3
Pan American Society of New England	1
Rhodes Scholarship Committee	2
Schoolmen's Wives	3
United Prison Association of Massachusetts	1
Total	164

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The next table below gives the titles of the exhibits held in the lobby and the dates during which they were displayed. It is estimated that about 2,000 entered the House solely to view the exhibits.

The Examination of Art and the Detection of Forgeries, November 1 to December 29
Variations on a Theme by Rubens, February 1 to March 9
The New Landscape, March 14 to 28
Architecture and Penology, April 1-27
Small Home Better Design Contest, May 1 to 15

Office space in the House continued as previously, with the Cooperative Broadcasting Council of the Lowell Institute and the Committee on International Scientific Publication on the fourth floor and the Academy offices on the first floor. The Boston Museum of Science and the Boston Authors Club continued to share space with us in the book-stack wing.

The costs of maintaining and operating the House are given in the table below:

Expenditures	*1949-1950*	*1950-1951*
Custodian, Assistance, Pensions	$3,252.40	$3,548.75
Coal	1,360.95	1,343.01
Gas	22.99	23.13
Electricity	1,303.71	1,385.20
Elevator	536.98	933.83
Water	111.95	25.50
Equipment	118.40	750.45
Supplies	453.47	591.01
Alterations and Repairs	1,697.56	1,582.78
Fire Insurance	552.27	594.62
Miscellaneous	109.20	55.00
Total	$9,519.88	$10,833.28
Appropriations (including pension)	9,787.24	12,085.00
Unexpended	$ 267.36	$ 1,251.72

Receipts for use of the facilities of the House by other scientific, educational and cultural organizations reduced the net cost to the Academy as follows:

	1949-1950	*1950-1951*
Total operating expenditures	$9,519.88	$10,833.28
Actual receipts for the year	3,895.90	4,100.56
Net cost of House Maintenance and Operations to the Academy	$5,623.98	$6,732.72

The other scientific and cultural organizations sharing the use of the House with us contributed about 35 percent of the operating costs this year

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as against about 37 percent last year, while they continue to occupy about 60 percent of the building. This, plus the fact that certain maintenance expenses, such as custodial wages, coal, supplies, and repairs, are continuing to increase, has led to a proposal to increase the fees paid by these organizations for their share of the expenses.

Major items of new furniture and equipment acquired during the year were for the Lounge: two dozen padded folding chairs costing about $240, five coffee tables costing about $345, and a beverage cooler in the adjacent snack pantry costing about $209. Further upholstering of the chairs in the Lounge was completed at a cost of about $429.

The noisy rumblings of the fan for ventilating the fourth floor offices were eliminated at a cost of about $110 and the expert advice of Professor Bolt of M.I.T. to whom the Academy owes thanks. The project of renewing the worn-out elements of our elevator mechanism was continued with the installation of a new floor-controller drum, so that the elevator is cured of its former bad habit of stopping between floors. Down in the basement the gas service was shut off because of a leak which it is estimated would have cost more to repair than to purchase and install an electric range (about $200) in the kitchen, which was the only place using gas in the building. New bulletin boards were installed in the Lobby at a cost of about $325. On these are posted announcements concerning scientific and cultural activities in Greater Boston, such as the Harvard University Gazette, the M.I.T. Calendar of Events, the Art Calendar, and announcements of the Museum of Fine Arts, the Boston Public Library, and others. These are increasingly read by visitors to the building.

We wish to record our appreciation to the Executive Officer, who has made easy the administrative work of the House Committee. Our Custodian, Mr. Waters, and his wife have served well and faithfully, and, in many instances, far beyond the call of duty. To them we extend our grateful thanks.

Respectfully submitted,
JOHN B. WILBUR
CHARLES H. TAYLOR
CHESTER M. ALTER, *Chairman*

May 9, 1951

Report of the Committee on Publication

The Committee held two formal meetings during the year, on June 13 and December 22, 1950, and conducted further business by correspondence and telephone.

There were no special publications during the year and no number of the Memoirs appeared.

Volume 78 of the Proceedings was completed with the August number, 1950. It contained 252 pages as compared with 372 pages in the preceding volume. Of volume 79, three numbers have appeared.

The Bulletin, under the direction of Mr. Burhoe, has been issued eight times. Aside from current notices it carried the abstracts of most of the communications presented at meetings.

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The Committee on Publications had at its disposal for the fiscal year $8,000. By March 31, 1951, it had expended $5,580.88, as compared with $6,463.81 in the previous fiscal year. The bills approved since the close of the fiscal year amount to $122.00, and bills are payable on about another $350 worth of printing. In the year 1950-1951, the investment income ($3,507.20) and sales and contributions toward publication ($1,689.86) totaled $5,197.06. This compares with a total of $7,929.24 in the fiscal year 1949-1950. The unexpended reserve balance in the publication account stands at $11,809.76 on March 31, 1951, as compared with $12,193.58 one year before.

The permanent agreement with the Linda Hall Library under which it receives the continuations of our exchanges was negotiated during the year and is now in full operation. Linda Hall Library receives the exchanges and handles the distribution of our publications. It pays annually to the Academy a sum representing the cost of these exchanges to the Academy. This sum is determined by the Publication Committee in consultation with the Executive Officer. The agreement covers all questions that are likely to arise and is so drawn that either party may withdraw after due notice has been given.

The ever-present problem of publication costs concerned the Committee less during the current year than before, merely because of less pressure from contributors. Fewer manuscripts were offered than for some years past and several of these had to be declined.

The Committee devoted considerable time to the question of the future contents of the Proceedings. On June 13, 1950, the Editor met with Mr. Bunker, Secretary of the Academy, and Mr. Frank, President of the Institute for the Unity of Science, and others, and drew up a memorandum proposing the publication of a series of the Proceedings with the cooperation of the Institute for the Unity of Science. The character of this series was envisaged as "papers of rather general interest to men of learning in both the sciences and the humanities . . . on such subjects as the philosophy of science or scientific philosophy, . . . and common areas of interest among the sciences and between the sciences and the various divisions of the humanities." It is expected that an issue of this series will be published this summer.

The following policy was agreed upon at the December 22, 1950, meeting of the Committee on Publications and at the April 11, 1951, meeting of the Committee on Planning and Development:

> That the Proceedings be developed into a communications instrument of common interest to the Fellows, it being assumed for a first approximation that this area of common interest lies in papers relating to the various fields of knowledge with one another and in papers indicating the implication of knowledge for the thought and action of human society. As such an instrument it should be mailed to all Fellows.
>
> That the Academy will refuse to publish any highly specialized papers that properly should be published by one of the specialized societies in its journal or other medium. Exceptions should be made only where there is

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no natural outlet for a paper of unusual importance; or for certain special series, having no other natural outlet, which are either subsidized by outside sources or which have a prospect of sales which would cover our costs. Such highly specialized publications should be published as a part of the Memoirs rather than the Proceedings, with the exception of any continuation of those series already started in the Proceedings.

That the Editor be authorized to use publication funds not only for actual printing and mailing but also for paid assistance to make possible a more aggressive search for papers for the Proceedings that will interest Fellows of the Academy generally.

The Editor requests any suggestions concerning this program.

Respectfully submitted,

May 9, 1951 TAYLOR STARCK, *Chairman*

Report of the Permanent Science Fund Committee

The Permanent Science Fund Committee met at the House of the Academy on the evenings of October 18, 1950 and March 23, 1951.

At our October meeting we had 23 applications to consider, totaling requests for $35,085. The Fund, as of October 1, 1950, amounted to $32,791 which included a reserve, since the total 1949-50 income was only $15,850. On the occasion of this meeting 12 of the 23 applications were acted upon favorably involving grant awards of $13,550. Eleven of the applications were declined.

At our March 23, 1951 meeting, 19 applications totaling requests for $23,300 were presented for consideration. The 1950-51 income of the Fund was $15,152 but, with our reserve, $28,115 was available as of March 1, 1951. Of the 19 applications, 5 were declined and 14 were approved. The total amount for these approved applications was $13,600.

During the war years very few applications were received and few grants were made so that a surplus accumulated. In the last few years the number and quality of the applications has increased and it has been necessary to turn down some very good applications because of our wish not to use up the surplus too rapidly. We have, during the past year, spent $27,150 from a fund the annual income of which was $15,152. While we still have a surplus from the war years it is clear that our rate of expenditure will have to be reduced in the future and an increasing number of good applications will have to be declined.

Reports of the specific grants to individuals were made to the Council of the Academy on October 20, 1950 and on March 27, 1951, as follows.

Grants Approved October 18, 1950

1. To Stanley S. Ballard, Professor of Physics, Tufts College, Medford 55, Massachusetts, for investigations of the inelastic behavior of optical crystals, $800.

2. To Alex Bavelas, Associate Professor of Psychology, Massachusetts Institute of Technology, Cambridge 39, Massachusetts, for experimental

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studies of communication in psychological analogues of industrial situations, $1000.

3. To Charles F. Brooks, Professor of Meteorology, and Director, Blue Hill Meteorological Observatory, Harvard University, Milton 86, Massachusetts, for publication of a book on the physics of snow crystals by Professor U. Nakaya, $1500.

4. To Lulu O. Gaiser, Research Assistant, Harvard University, Cambridge 38, Massachusetts, for studies in cytotaxonomy of the *Kuhnineae* (*Eupatorieae*) of the *Compositae*, $500.

5. To Eli S. Goldensohn, Assistant Professor of Physiology and Pharmacology, University of Colorado Medical School, 4200 East Ninth Avenue, Denver, Colorado, for studies in the thermal increments of the chemical pacemakers for alpha rhythm in schizophrenia, $1400.

6. To Hui-Lin Li, Professor of Botany, National Taiwan University; The Blandy Experimental Farm, Boyce, Virginia, for cytotaxonomical studies in *Scrophulariaceae*, $1400.

7. To Lorus J. Milne, Associate Professor of Zoology, and Margery J. Milne, Research Fellow in Zoology, University of New Hampshire, Durham, New Hampshire, for study of invertebrate photoreceptors—anatomy and physiology, including rôle in normal living habits, $1200.

8. To Jytte Marie Muus, Professor, Department of Physiology, Mount Holyoke College, South Hadley, Massachusetts, for studies in chemical and enzymatic properties of salivary amylase, $1450.

9. To Christian S. Rondestvedt, Jr., Instructor, Department of Chemistry, University of Michigan, Ann Arbor, Michigan, for synthesis of diarylboron halides and diarylboron free radicals; a study of their properties, $550.

10. To S. Zelig Sorkin, Research Assistant, The Mount Sinai Hospital, 1148 Fifth Avenue, New York, New York, for studies in adrenal function in hibernation, $350.

11. To Ronald D. Stewart, Assistant Professor of Biochemistry, Dalhousie University, Halifax, Nova Scotia, Canada, for purification of the hyperglycemic factor of the pancreas, $1400.

12. To Alejandro Zaffaroni, Postdoctoral Fellow, University of Rochester School of Medicine and Dentistry, Department of Biochemistry, 260 Crittenden Boulevard, Rochester 20, New York, for biosynthesis of the adrenal cortical hormones, $2000.

Grants Approved March 23, 1951

1. To Elso S. Barghoorn, Associate Professor of Botany and Curator of Paleobotany, Harvard University, Cambridge 38, Massachusetts, for qualitative and quantitative evaluation of plant microfossils (pollen and spores) in geologically recent peat accumulation of the southeastern U. S., $400.

2. To Leon Ciereszko, Assistant Professor of Chemistry, University of Oklahoma, Norman, Oklahoma, for study of the chemistry and metabolism of *bacillus subtilis* as related to the production of D-glutamic acid polypeptide, $600.

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3. To William Emerson, Dean Emeritus, School of Architecture, Massachusetts Institute of Technology, 107 Massachusetts Avenue, Boston 15, Massachusetts, for study of the changes in the structure of Hagia Sophia since its erection in 537 A. D., $1000.

4. To Alexander Forbes, Professor of Physiology, Emeritus, Harvard University, Cambridge 38, Massachusetts, for study of electric response of vertebrate retina to color shift, $1000.

5. To *Zareh Hadidian, Associate Professor of Pharmacology*, Tufts College Medical School, 136 Harrison Avenue, Boston 11, Massachusetts, for investigation of the reaction between hyaluronidase and the thermolabile hyaluronidase inhibitor of normal serum, $1500.

6. To Charles Heiser, Jr., Assistant Professor and Curator of the Herbarium, Indiana University, Bloomington, Indiana, for taxonomic and cytogenetic studies on sunflowers (*Helianthus annuus, H. debilis* and *H. Petiolaris*), $1000.

7. To John James, Assistant Professor of Sociology, University of Oregon, Eugene, Oregon, for a comparative study of small group size in the formal and informal organization of an industrial plant, $400.

8. To Giuseppe Moruzzi, Professor of Physiology and Head of the Department of Physiology, University of Pisa, Via S. Zeno, 13, Pisa, Italy, for study of the mechanism of the cortical arousal reactions, $1200.

9. To James W. Patterson, Assistant Professor of Anatomy, Western Reserve University School of Medicine, 2109 Adelbert Road, Cleveland 6, Ohio, for study of the role of ascorbic and dehydroascorbic acid in metabolism, $1500.

10. To Nicholas Polunin, Research Fellow of the Gray Herbarium, Harvard University, Cambridge 38, Massachusetts, for completion of a circumpolar flora and preparation of a general survey of arctic botany, $1500.

11. To Olive Watkins Smith, Director, Fearing Research Laboratory, Free Hospital for Women, Brookline 46, Massachusetts; Research Associate, Department of Gynecology, Harvard Medical School, Boston 15, Massachusetts, for chemical identification of x urinary products of estriol excreted by post menopausal women with cancer following the oral administration of estriol, $1000.

12. To Harry Sobotka, Chief Chemist, The Mount Sinai Hospital, Fifth Avenue and 100th Street, New York 29, New York, for study of monomolecular techniques for microanalysis, especially of keto-steroids, $1000.

13. To Karl Viëtor, Professor of German, Harvard University, Cambridge 38, Massachusetts, for an intellectual and literary history of the fin-de-siècle, $1000.

14. To Talbot H. Waterman, Assistant Professor of Zoology, Yale University, New Haven 11, Connecticut, for study of the structure and function of the flabellum of limulus, $500.

The Chairman of the Committee has received a number of recent progress reports and reprints of work done with aid from the Permanent Science

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Fund. Some impressive contributions to science have been made by the investigators aided by these modest grants which average around $1,000 each.

Respectfully submitted,

May 9, 1951 HUDSON HOAGLAND, *Chairman*

Report of the Rumford Committee

The Rumford Committee reports that during the year 1950-1951, the only grant of funds was $2,000 for the expenses of a conference on "The Sun in the Service of Man," which was held at the House of the Academy on February 24 and 25, 1951, to review the scientific problems relating to man's use of the heat and light of the sun which, directly or indirectly, has been the only significant source of energy and food. Approximately 100 invited specialists participated in the two-day symposium, and the papers presented will appear shortly as an issue of the Proceedings of the Academy.

The Rumford Premium for 1951, upon recommendation of the Committee and approval by the Council on March 14, 1951, will be presented to Dr. Herbert E. Ives of Upper Montclair, New Jersey, formerly with the Bell Telephone Laboratories, in recognition of his noteworthy contributions to optics. It is expected that the presentation will be made at the November, 1951, meeting of the Academy and that Dr. Ives will give the communication at that meeting.

The Treasurer reports that the unexpended income of the Rumford Fund, as of March 31, 1951, was $25,488.11.

Respectfully submitted,

May 9, 1951 HARLOW SHAPLEY, *Chairman*

Report of the Cyrus M. Warren Committee of the American Academy of Arts and Sciences

The Committee had available for grants the sum of fifteen hundred dollars, which amount was voted by the Council at the meeting on March 8, 1950, for awards during the year 1950-1951.

At a meeting of the Committee on May 25, 1950, the following grants were voted:

To Mr. A. P. Altshuller of the University of Cincinnati, a grant of $250 for apparatus and supplies to be used in a study of the solubility of ethyl acetate in aqueous solutions of electrolytes.

To Dr. Charles L. Bickel of the Phillips Exeter Academy, a grant of $100 for continuation of research in organic chemistry, toward the support of which grants were made in 1947, 1948 and 1949.

To Professor A. J. Castro of San Jose State College, a grant of $55 for chemicals and equipment to be used in a study of the constitution of the product from the condensation of styrene oxide with ammonia.

To Professor M. F. Mallette of Johns Hopkins University, a grant of $270

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for the purchase of an International Type-2 Centrifuge to be used in a study of nucleic acid preparations.

To Mr. Gerald R. Seaman of Creighton University, Omaha, Nebraska, a grant of $275 for apparatus for use in a continuation of an investigation indicating that the ciliated protozoan, *Colpidium campylum*, is capable of utilizing atmospheric nitrogen.

To Sister M. Angelice Seibert of Ursuline College, Louisville, Kentucky, a grant of $300 for the purchase of ultraviolet accessories for a Beckman Model DU Spectrophotometer for use in the determination of essential chemical groups in enzyme proteins.

To Professor John D. Spikes of the University of Utah, a grant of $150, one-half of the amount requested, on the basis of a similar amount being given by the University of Utah. This grant is to be used in research on the part of the photosynthesis process which can occur in cell-free preparations, i.e. the so-called Hill reaction in which water is oxidized to oxygen gas and hydrogen ion by illuminated chloroplasts in the presence of an added oxidant.

A report on progress has been received from Sister M. Angelice Seibert; and also a progress report together with a complete report on the expenditure of the grant from Mr. Gerald R. Seaman.

Reprints have been received as follows:

From Dr. Charles L. Bickel:

"The Debromination of χ, β-Dibromo Ketones by Bases". J. Am. Chem. Soc., *72*, 349 (1950).

"The Addition of Malonic Esters to an Acetylenic Ketone". J. Am. Chem. Soc., *72*, 1022 (1950).

From Professor F. J. Reithel:

"Determination of Lactose in Biological Materials", by M. G. Horowitz, H. M. Davidson, F. D. Howard and F. J. Reithel. Anal. Chem., *23*, 375 (1951).

Respectfully submitted,

May 9, 1951 FREDERICK G. KEYES, *Chairman*

Report of the Amory Prize Committee

The Amory Prize Committee held one meeting with all members present on November 8, 1950.

The work of several persons who might be considered for the next award was discussed. It was recognized that as yet no developments of major importance in the field of the donor's primary interest had come to the attention of the Committee.

Ten or twelve new names were added to those previously listed as worth watching. The transplanting of kidney tissue was suggested as possible of development to where it might merit a prize.

It was decided not to circularize institutions until the last year or two of the septennium, i.e., 1953 or 1954.

Respectfully submitted,

May 9, 1951 EDWIN B. WILSON, *Chairman*

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OFFICERS AND COMMITTEES ELECTED
MAY 9, 1951

President ..... Edwin H. Land
Vice-President for Class I ..... Jerome C. Hunsaker
Vice-President for Class II ..... Alfred S. Romer
Vice-President for Class III ..... Erwin D. Canham
Vice-President for Class IV ..... Wallace Goodrich
Secretary ..... Henry B. Phillips
Treasurer ..... Horace S. Ford
Librarian ..... Ernest H. Huntress
Editor ..... Taylor Starck

Councillors to serve for Four Years

Harold L. Hazen, *of Class I*
Kenneth V. Thimann, *of Class II*
Carl J. Friedrich *of Class III*
Joseph Hudnut, *of Class IV*

House Committee

Chester M. Alter ..... *to serve for one year, and as Chairman*
John B. Wilbur ..... *to serve for two years*
Frank M. Carpenter ..... *to serve for three years*

Committee on Membership

The President, *Chairman, ex officio*
To serve for terms of two years:
William H. McAdams, *of Class I*
Alden B. Dawson, *of Class II*
Zechariah Chafee, Jr., *of Class III*
Bartlett H. Hayes, *of Class IV*

Committee on Meetings

The President, *Chairman, ex officio*
The Four Vice-Presidents, *ex officiis*
The Secretary, *ex officio*
Avery A. Morton, *of Class I* ..... to serve for one year
Frederick L. Hisaw, *of Class II* ..... to serve for one year
Mark DeW. Howe, *of Class III* ..... to serve for two years
Henry J. Cadbury, *of Class IV* ..... to serve for two years

Committee on Finance

The Treasurer, *Chairman, ex officio*
Henry P. Kendall ..... to serve for one year
Henry L. Shattuck ..... to serve for one year
Ralph E. Freeman ..... to serve for two years
Francis C. Gray ..... to serve for two years

Auditing Committee

Donald S. Tucker ..... to serve for one year
Thomas H. Sanders ..... to serve for two years

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Committee on Publication

The Editor, *Chairman, ex officio*

Ernest H. Huntress, *of Class I* ..... to serve for one year
Marland P. Billings, *of Class II* ..... to serve for one year
John E. Burchard, *of Class III* ..... to serve for two years
Wilbur K. Jordan, *of Class IV* ..... to serve for two years

Permanent Science Fund Committee

Hudson Hoagland, *Chairman* ..... to serve for a term of two years
A. Baird Hastings ..... to serve for one year
Edward L. Moreland* ..... to serve for one year
Julius A. Stratton ..... to serve for one year
Gustavus J. Esselen ..... to serve for two years
Helen M. Cam ..... to serve for three years
Donald H. Menzel ..... to serve for three years

* Deceased June 17, 1951.

Rumford Committee

Harlow Shapley, *Chairman* ..... to serve for one year
Percy W. Bridgman ..... to serve for one year
George R. Harrison ..... to serve for two years
Francis O. Schmitt ..... to serve for two years
Daniel F. Comstock ..... to serve for three years
Arthur C. Hardy ..... to serve for three years
Joseph H. Keenan ..... to serve for three years

C. M. Warren Committee

Frederick G. Keyes, *Chairman* ..... to serve for one year
Charles A. Kraus ..... to serve for one year
Avery A. Morton ..... to serve for two years
Walter C. Schumb ..... to serve for two years
Edwin J. Cohn ..... to serve for three years
Louis F. Fieser ..... to serve for three years
Eugene M. Landis ..... to serve for three years

Amory Prize Committee

To serve for terms of one year:

Edwin B. Wilson, *Chairman*

William B. Castle
Roy G. Hoskins
Gregory Pincus
George W. Thorn
George B. Wislocki
S. Burt Wolbach

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NEW MEMBERS ELECTED MAY 9, 1951

FELLOWS (58)

CLASS I—MATHEMATICAL AND PHYSICAL SCIENCES (16)

Section 1—Mathematics and Astronomy (5)

Walter Baade.....Mount Wilson Observatory, Pasadena, Calif.
Stefan Bergman.....Harvard University, Cambridge, Mass.
Dirk Brouwer.....Yale University, New Haven, Conn.
Claude Chevally.....Columbia University, New York, N. Y.
Chia-Chiao Lin.....Mass. Institute of Technology, Cambridge, Mass.

Section 2—Physics (4)

William Phelps Allis.....Mass. Institute of Technology, Cambridge, Mass.
Gregory Breit.....Yale University, New Haven, Conn.
Harvey Brooks.....Harvard University, Cambridge, Mass.
Philippe Emmanuel Le Corbeiller..Harvard University, Cambridge, Mass.

Section 3—Chemistry (4)

Robert Hugh Cole.....Brown University, Providence, R. I.
Paul Mead Doty .....Harvard University, Cambridge, Mass.
John Clark Sheehan.....Mass. Institute of Technology, Cambridge, Mass.
Melville Lawrence Wolfrom.....Ohio State University, Columbus, Ohio

Section 4—Technology and Engineering (3)

Egon Orowan....Massachusetts Institute of Technology, Cambridge, Mass.
William Prager.....Brown University, Providence, R. I.
Harold Christian Weber....Mass. Institute of Technology, Cambridge, Mass.

CLASS II—NATURAL AND PHYSIOLOGICAL SCIENCES (9)

Section 1—Geology, Mineralogy, and Physics of the Globe (2)

Everette Lee De Golyer.....Dallas, Texas
(William) Maurice Ewing.....Columbia University, New York, N. Y.

Section 3—Zoology and Physiology (4)

Edward Calvin Kendall.....Mayo Foundation, Rochester, Minn.
Charles William Metz.....University of Penn., Philadelphia, Pa.
Karl Patterson Schmidt ....Chicago Natural History Museum, Chicago, Ill.
Carroll Milton Williams .....Harvard University, Cambridge, Mass.

Section 4—Medicine and Surgery (3)

Philip Showalter Hench .....Mayo Foundation, Rochester, Minn.
John Rodman Paul.....Yale University, New Haven, Conn.
Nathan Bill Talbot.....Harvard University, Cambridge, Mass.

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Class III—The Social Arts (16)

Section 1—Jurisprudence (1)

Harold Medina.....U. S. District Court, New York, N. Y.

Section 2—Government, International Law, and Diplomacy (3)

Ralph Johnson Bunche.....United Nations, New York, N. Y.
Peter H. Odegard .....University of California, Berkeley, Calif.

Section 3—Economics and Sociology (4)

James Frederic Dewhurst .... Twentieth Century Fund, Washington, D. C.
Caryl Parker Haskins ..... Haskins Labs., New York, N. Y.
Paul Felix Lazarsfeld .....Columbia University, New York, N. Y.
Charles Franklin Phillips .....Bates College, Lewiston, Maine

Section 4—Administration and Affairs (9)

Roger Nash Baldwin .....Amer. Civil Liberties Union, New York, N. Y.
Clinton Strong Golden .....Labor Advisor, E. C. A., Washington, D. C.
Crawford Hallock Greenewalt
E. I. du Pont de Nemours and Co., Wilmington, Del.
Alfred Whitney Griswold .....Yale University, New Haven, Conn.
William Vermillion Houston .....Rice Institute, Houston, Texas
William McNear Rand .....Monsanto Chemical Company, St. Louis, Mo.
Abram Leon Sachar .....Brandeis University, Waltham, Mass.
Leonard Dupee White .....University of Chicago, Chicago, Ill.
Walter Muir Whitehill.....Boston Athenaeum, Boston, Mass.

Class IV—The Humanities (17)

Section 1—Theology, Philosophy, and Psychology (3)

Filmer Stuart Cuckow Northrop .....Yale University, New Haven, Conn.
Robert Richardson Sears .....Harvard University, Cambridge, Mass.
Walter Terence Stace .....Princeton University, Princeton, N. J.

Section 2—History, Archaeology, and Anthropology (6)

Henry Steele Commager .....Columbia University, New York, N. Y.
John Dollard .....Yale University, New Haven, Conn.
Douglas Southall Freeman .....University of Richmond, Richmond, Va.
George Peter Murdock .....Yale University, New Haven, Conn.
Allan Nevins .....Columbia University, New York, N. Y.
Lily Ross Taylor .....Bryn Mawr College, Bryn Mawr, Pa.

Section 3—Philology (2)

Mark Van Doren .....Columbia University, New York, N. Y.
Charles Frederick Voegelin .....University of Indiana, Bloomington, Ind.

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Section 4—The Fine Arts and Belles Lettres (6)

Leonard Bernstein ..... New York, N. Y.
Elizabeth Sprague Coolidge ..... Cambridge, Mass.
Aaron Copland ..... New York, N. Y.
Robert Penn Warren .....University of Minnesota, Minneapolis, Minn.
George Frisbie Whicher .....Amherst College, Amherst, Mass.
Edgar Wind .....Smith College, Northampton, Mass.

FOREIGN HONORARY MEMBERS (5)

CLASS I

Section 3, Chemistry

Sir Cyril (Norman) Hinshelwood ....Oxford University, Oxford, England

CLASS II

Section 2, Botany

Claude (Wilson) Wardlaw
University of Manchester, Manchester, England

CLASS II

Section 3, Zoology and Physiology

Sir Charles (Robert) Harington
National Institute for Medical Research, London, England

CLASS III

Section 2, Government, International Law, and Diplomacy

Charles Habib Malik ..... New York, N. Y.

CLASS IV

Section 2, History, Archaeology, and Anthropology

Henry Ernest Sigerist ..... Yale University, Pura, Switzerland

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